Global Weather 4

**Outcome: (116-1), (117-10)**

# Content: Page 218-219

**Meteorologist:**

* A **professional weather forecaster**
* They study atmospheric conditions and **make predictions regarding future weather conditions.**

**Early Professional Forecasting:**

* In the early days of weather forecasting the meteorologist would collect **data on temperature, air pressure, winds, humidity, precipitation, cloud cover and wind speed and direction.**
* This information would be gathered **from different weather stations all across the country.**
* They would put all this information on **great big charts and would try to forecast the weather**.
* The best they could do, however, was **accurately predict the weather for about one day in advance.**
* The main problem was that the everyday view of the weather was **from the surface of the earth, looking up and out.**

**Modern Meteorology:**

* In the 1960's when the first satellite was put into orbit the way we **looked at the world and the weather had changed forever.**
* **Weather satellites** now give **us a bird’s eye view of weather systems.**
* The weather satellites still collected the same basic data that the meteorologist collected before, but the difference **is that satellites are orbiting at extremely high altitudes and produce a very large view of the surface of the earth.**
* Meteorologists still forecast the weather **but the tools they use now is helped a great deal by technology.**
* Some of the devices used to forecast the weather today are; **weather satellites, weather balloons, and radar.**

#### **There are two types of weather satellites:**

* **Low-orbit satellites** orbit at **about 1000 km above the earth.** 
  + **These satellites send back information regarding global winds, air temperature and humidity levels in the upper atmosphere.**
* **High-orbit satellites** **orbit at about 36 000 km.**
  + These satellites **take pictures of cloud cover.**
  + They also **take Infra red (IR) images, which show the heat being given off by the earth.**
  + The high orbit satellites **take a much larger picture of the earth.**

#### **Weather Balloons:**

* Large **helium filled balloons that are released into the atmosphere on a daily basis.**
* Carries a radiosonde up through the atmosphere.
* The **radiosonde** houses on board computer **instruments that record temperature, pressure, humidity and amount of ice crystals.**
* As the balloon rises in the atmosphere, **data is relayed back to computers every few seconds.**

#### **Radar:**

* Radar stands for Radio Detection And Ranging.
* The Radar sends out a radio wave **and if the radio wave hits an object like an airplane the radio wave bounced back.**
* Measuring the time it took the wave to bounce back **you could calculate how far away the object was.**
* The interesting thing here is that **rain showers also caused the radar wave to bounce back.**
* Radar operators were getting "fuzzy" data **but could accurately position the rain shower!**
* Similar technology is now **used to track large rain clouds.**
* **Doppler radar** as it is sometimes called **can detect where the rain is falling and can now even tell us how much rain is falling.**
* Radar is particularly useful for **detecting and tracking thunderstorms and tornados**.

**Homework: Page 219: #’s 1, 2**

**SRL: Page 344**

